

endless literature, but not contributing a single fact. Their measure of the value of a paper seems to be the number of foot-note references to literature. A second kind of work is really work, but is misdirected. The amount of misspent energy in scientific work is simply appalling. Some trivial subject is taken which amounts to nothing when completed, illustrating the saying, "what's true is not new, and what's new is good for nothing." A third class lay hold of subjects which are important enough, but are in such a tremendous hurry that one can not easily dissociate what they have seen from what they have guessed at. An itch for publishing is the spur which causes the natural American haste to break into a gallop. To present raw and undigested material to the botanical public is to have it all rejected.

Our attention has lately been called to these various kinds of botanical work, and we have taken this opportunity to speak of them. There is one defect, however, which is apt to be found even in good work. It is a defect which usually marks a beginner, and that is *generalization*. Papers with a small fact or two and world-wide generalizations are too common. It is well to remember that generalization is always unsafe, should never be ventured upon by a beginner, and is too often an indication of lack of facts. Generalization is only easy to one unembarrassed by facts. Happy is the veteran botanist who has no such youthful attempt to look back upon. If we could make all American botanists understand that it is their mission to collect facts with the most painstaking care, and to record them in the simplest possible way, the new decade would bring lasting honor to American botany.

CURRENT LITERATURE.

Bibliotheca Botanica.

We are gratified that this excellent series of monographs continues to be issued, for at the outset we apprehended their early discontinuance. While the series is an expensive one for the purchaser, we can hardly see how it can fail to be a more expensive one to the publisher. The elaborate style of the letter press and the exquisite plates are not equaled so far as we know, and we hope for a long continuance of the serial and wish for it an increasing constituency that it deserves. The fifteenth and sixteenth¹ parts are before us. In the former Dr. C. R. G. Schumann gives an account of the anatomical structure of the bud-scales of Coniferæ and woody dicotyledons. The usual review of the literature of the subject precedes the paper. Dr. Schumann discusses the epidermis of both outer

¹ Heft 15.—Anatomische Studien über die Knospenschuppen von Coniferen und dicotylen Holzgewächsen. 4to. p. 37. pl. 5.

Heft 16.—Beiträge zur Morphologie und Anatomie der Dioscoreaceen. 4to. p. 35. pl. 5, Cassel: Theodore Fischer. 1889. Each M. 10.

and inner sides, its cuticle, thickening, wax excretion and hair structures; the parenchymatous, collenchymatous and sclerotic elements of the fundamental system; the formation and character of the periderm; the intercellular spaces and secretion reservoirs, and the vascular bundles. The memoir is illustrated with forty-six figures on five plates. One hundred and thirty-five species of plants are listed by the author as having been examined.

In the latter Emil Bucherer offers contributions to the morphology and anatomy of the Dioscoreaceæ. His researches refer specially to *Dioscorea Batatas*, *D. sinuata* and *Tamus communis*, and can not readily be summarized.

Boleti of the United States.²

Nothing stimulates the study of a group of plants more than a good synopsis of the species. This is especially desirable when the group is absolutely unapproachable, except by the trained specialist. The mycologists are rapidly arousing interest in their department by the preparation of just such monographs as the one before us. Boleti in the herbarium are decidedly difficult, for they are so fleshy and perishable that the natural form and coloration have, to a large extent, disappeared. Professor Peck deserves the thanks of mycologists for thus seeking to facilitate the study of a group difficult, not only in the imperfection of its preservation, but also in the widely scattered publication of our American species. The *Hymenomycetes Europæi* contains 100 species, while this paper presents 110, 36 of which occur also in Europe. This large number of endemic species indicates that the United States is rich and peculiar in its Boleti. The three genera are *Boletinus*, *Boletus* and *Strobilomyces*, containing 5, 103 and 2 species respectively: The large genus *Boletus* is divided into 15 tribes, and of the 103 species 6 are new, 33 bear the name of Peck as author and 21 that of Frost.

Minor Notices.

MR. T. S. BRANDEGEE has published a pamphlet of 116 pages, with 12 plates and a map, containing a list of plants collected by him in Lower California during 1889. It is a reprint from the *Proc. Calif. Acad. Sci.* Ser. 2, Vol. ii, pp. 117-232. From the wealth of new material this paper presents, it is safe to infer that southern Lower California is a new country botanically. Many of the plants listed have not yet been determined as to their species, but in this first study of the collection Mr. Brandegee describes over 80 new species, and a new genus of Compositæ, *Alvordia* by name. Dr. George Vasey has determined the grasses, among which are three new species. To Dr. C. F. Millspaugh was given the Euphorbiaceæ, among which he finds 14 new species, half of which belong to the

²PECK CHARLES H.—Boleti of the United States. *Bulletin of the N. Y. State Museum*, No. 8, September, 1889, pp. 73-166.

genus *Euphorbia*. Dr. H. W. Harkness gives a list of the fungi collected, among which is a new *Puccinia*. Over 100 new species already described from a single season's collecting, with many species remaining undetermined, surely speaks well for the botanical riches of Lower California.

IN THE LAST numbers (37 and 38) of Engler & Prantl's *Die natürlichen Pflanzenfamilien* several orders are presented by Dr. O. Drude, chiefly the *Ericaceæ*. We note the following changes in North American forms as given in Gray's *Synoptical Flora*. *Clethra* is made the type of a separate order, *Clethraceæ*. *Pyrolaceæ* are again kept apart in a distinct order, which includes the tribe *Pyroleæ* and the suborder *Monotropeæ* of the *Synoptical Flora*, *Moneses* being included in *Pyrola*. In the order *Ericaceæ*, *Phyllodoce* of Salisbury is again separated generically from *Bryanthus*; *Lyonia* Nutt. is restored as a genus and made to include *Cassandra* and the section *Eubotrys* of *Leucothoe*; *Arctous*, one of Gray's sections of *Arctostaphylos*, is made a genus, and contains our *Arctostaphylos alpina*.

DR. OLIVER R. WILLIS has just revised Wood's "Lessons in Botany." In these days of laboratories and microscopes, even in high schools, there is a demand for elementary instruction in plant tissues, as well as for elementary physiology. The older text-books, in order to keep in the market, must meet this demand, and the present edition of the well-known text-book mentioned above has this in view. We are glad to see that the editor emphasizes the necessity of laboratory work, and presents the text-book merely as a full and illustrated catalogue of things that can be seen in the study of the plants themselves. The advantage of such change in our text-books is not only that it meets a demand, but helps to create one.

The eighth part of the *Muscologia Gallica*¹ has come from the author and publisher. It includes the genera *Webera* with 15 species, *Bryum* with 39, and 9 species of *Mnium*. The plates, however, do not quite complete the genus *Bryum*. The author is entirely conservative in regard to nomenclature, and follows Schimper almost without change in the entire work thus far. This is convenient, but hardly defensible. In the two difficult genera which are treated in this part Mr. Husnot has reduced a number of species to the rank of varieties.

OPEN LETTERS.

Once more about the weeds.

While not unmindful of the substantial aid that the botanists of the country have rendered me in the study of our weed pests, the writer, in view of the task imposed by the Biological section of the A. A. A. S. at its Toronto meeting, namely, the preparation of a paper upon "The Mi-

¹Husnot, T.—*Muscologia Gallica*, descriptions et figures des mousses de France et des contrées voisines. 8°, pp. 225-256, pl. LXI-LXVIII. Cahen (par Athis, Orne); the author, 1889. 5 fr.